WHAT IS CLAIMED IS:

1. An exposure method comprising the steps of:

illuminating a mask that forms a desired pattern and an auxiliary pattern smaller than the desired pattern; and

projecting light from the mask onto an object to be exposed via a projection optical system at a position offset from a focus position that provides the highest resolution so that the auxiliary pattern is not resolved.

2. An exposure method according to claim 1, wherein the desired pattern is a contact-hole pattern.

3. An exposure method according to claim 2, wherein the mask two-dimensionally arranges the contact-hole pattern and the auxiliary pattern like a matrix.

4. An exposure method according to claim 2, wherein said step forms a quadrupole effective light-source shape that includes two pairs of light transmitting parts, two lines each connecting each pair of light transmitting parts constituting a coordinate for the contact-hole pattern.

5. An exposure method according to claim 2, wherein a distance A between the best focus position and the defocus position meets the following equation:

$$0 < A \leq k_1 \times (D / S) \times (\lambda / NA^2)$$

where D is a hole diameter of the contact-hole pattern, S is a hole diameter of the auxiliary pattern, P is a half-pitch of the contact-hole pattern and auxiliary pattern, λ is a wavelength of exposure light, NA is a numerical aperture of the projection optical system, and $k_1 = (NA / \lambda) \times P$.

6. An exposure method according to claim 1, wherein said step uses illumination light that includes a first component incident perpendicularly upon the mask, and a second component that is incident obliquely upon the mask and has light amount smaller than that of the first component.

7. An exposure method according to claim 1, wherein said step inclines the mask or the object to be exposed relative to an optical axis of the projection optical system.

8. An exposure method according to claim 1, wherein a shape of the auxiliary pattern is analogous to that of the desired pattern.

9. An exposure method comprising the step of illuminating a mask that forms a desired pattern and an auxiliary pattern smaller than the desired pattern, and projecting the light from the mask onto an object to be exposed via a projection optical system at positions which are different in defocus amount.

10. An exposure method according to claim 9, wherein the desired pattern is a contact-hole pattern.

11. An exposure method according to claim 10, wherein the mask two-dimensionally arranges the contact-hole pattern and the auxiliary pattern like a matrix.

12. An exposure method according to claim 10, wherein said illuminating step forms a quadrupole effective light-source shape that includes two pairs of light transmitting parts, two lines each connecting each pair of light transmitting parts constituting a coordinate for the contact-hole pattern.

13. An exposure method according to claim 10, wherein a distance A between the best focus position and the defocus position meets the following equation:

$$0 < A \leq k_1 \times (D / S) \times (\lambda / NA^2)$$

where D is a hole diameter of the contact-hole pattern, S is a hole diameter of the auxiliary pattern, P is a half-pitch of the contact-hole pattern and auxiliary pattern, λ is a wavelength of exposure light, NA is a numerical aperture of the projection optical system, and $k_1 = (NA / \lambda) \times P$.

14. An exposure method according to claim 9, wherein the step uses illumination light that includes a first component incident perpendicularly upon the mask a second component that is incident obliquely upon the mask and has light amount smaller than that of the first component.

15. An exposure method according to claim 9, wherein one of the positions is the best focus position.

16. An exposure method according to claim 9, wherein said step inclines the mask or the object to be exposed relative to an optical axis of the projection optical system.

17. An exposure method according to claim 9, wherein a shape of the auxiliary pattern is analogous to that of the desired pattern.

18. An exposure apparatus comprising:

an illumination optical system for illuminating a mask that forms a desired pattern and an auxiliary pattern smaller than the desired pattern; and

a projection optical system for projecting light from the mask onto an object to be exposed,

wherein said exposure apparatus exposes the object at least at a defocus position offset from the best focus position.

19. An exposure apparatus according to claim 18, wherein said exposure apparatus exposes the object at the defocus position and at the best focus position.

20. An exposure apparatus according to claim 18, further comprising a mechanism for inclining at least one of the mask and the object.

21. An exposure apparatus according to claim 18, further comprising:

a stage for supporting the object; and

a drive mechanism for driving the object in an optical-axis direction of said projection optical system,

wherein a distance A between the best focus position and the defocus position, which is driven by said drive mechanism meets the following equation:

$$0 < A \leq k_1 \times (D / S) \times (\lambda / NA^2)$$

where D is a hole diameter of the contact-hole pattern, S is a hole diameter of the auxiliary pattern, P is a half-pitch of the contact-hole pattern and auxiliary pattern, λ is a wavelength of exposure light, NA is a numerical aperture of the projection optical system, and $k_1 = (NA / \lambda) \times P$.

22. A device fabricating method comprising the steps of:

illuminating a mask that forms a desired pattern and an auxiliary pattern smaller than the desired pattern, and projecting the light from the mask onto an object to be exposed via a projection optical system at a defocus position offset from the best focus position; and

performing a predetermined process for the object that has been exposed.

23. A device fabricating method comprising the steps of:

illuminating a mask that forms a desired pattern and an auxiliary pattern smaller than the desired pattern; projecting the light from the mask onto an object to be exposed via a projection optical system at positions which are different in defocus amount; and

performing a predetermined process for the object that has been exposed.

24. A device fabricating method comprising the steps of:

exposing an object using an exposure apparatus; and

performing a predetermined process for the object that has been exposed,

wherein the exposure apparatus includes:

an illumination optical system for illuminating a mask that forms a desired pattern and an auxiliary pattern smaller than the desired pattern; and

a projection optical system for projecting light from the mask onto an object to be exposed,

wherein said exposure apparatus exposes the object at least twice at different positions which are different in defocus amount.